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# **Pedestrian and Sidewalk Master Plan**

**Planning Commission  
Recommended  
August 15, 2006**

**City Council  
Adopted  
October 25, 2006**



ORDINANCE NO. 06-13

**AN ORDINANCE OF BRIGHAM CITY AMENDING THE GENERAL PLAN  
TO ADD THE PEDESTRIAN AND SIDEWALK MASTER PLAN AS AN APPENDIX TO  
THE GENERAL PLAN**

WHEREAS, the General Plan is an advisory guide for most land use decisions within Brigham City, the impact of which are determined by ordinance; and

WHEREAS, the Utah Code requires that all public uses, as further defined in state law, conform to the current General Plan; and

WHEREAS, over the last few years, the City has been asked to defer sidewalk for new development; and

WHEREAS, the City Council has approved a number of sidewalk deferrals after favorable recommendation by the Planning Commission; and

WHEREAS, the City Council and Planning Commission have become concerned that there is little basis as to why and under what conditions the City should consider a deferral of sidewalk; and

WHEREAS, the Pedestrian and Sidewalk Master Plan defines a procedure and establishes a priority under which sidewalk deferrals shall be considered; and

WHEREAS, following necessary public notice and a public hearing, the Brigham City Planning Commission has considered the proposed amendment and recommends its adoption by the City Council; and

WHEREAS, following necessary public notice and a public hearing, the City Council finds that such amendment of the General Plan is desirable and in the best interests of the citizens of Brigham City; and

WHEREAS, The Brigham City Council finds and determines that neither the public nor any person will be materially injured by this amendment to the General Plan.

NOW, THEREFORE BE IT AND IT IS HEREBY ORDAINED by the City Council of Brigham City:

Section 1. The General Plan is amended to add the Pedestrian and Sidewalk Master Plan as

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an appendix of the General Plan, as noted in Exhibit "A", attached hereto and made a part by reference.

Section 2. This ordinance shall take effect five (5) days after publication or posting.

PASSED AND ADOPTED BY THE CITY COUNCIL OF BRIGHAM CITY, STATE OF  
UTAH, ON THIS 5<sup>th</sup> DAY OF October, 2006

BRIGHAM CITY  
  
Lou Ann Christensen, Mayor

ATTEST:

  
Mary Kate Christensen, City Recorder

## Introduction

Over the last few years, the City has been asked to defer sidewalk and has approved a number of sidewalk deferrals for new development. The City Council and Planning Commission have become concerned that there is little basis as to why and under what conditions the City should consider a deferral of sidewalk. From this discussion by the City Council and Planning Commission, it was determined that the City should develop a Pedestrian and Sidewalk Master Plan.

The Pedestrian and Sidewalk Master Plan promotes pedestrian safety and access to help ensure that Brigham City is a safe, convenient and attractive place to walk. This Plan identifies pedestrian routes, emphasizing safe routes to school. The routes include; streets, walkways and trails that connect schools, libraries, parks, neighborhoods and commercial districts throughout the City.

The workability of a community is very important for the long term development of a pedestrian friendly environment. The following Pedestrian and Sidewalk Master Plan will develop a set of priorities for sidewalks within Brigham City. These priorities will be used for determining the need for sidewalk and identify where the City should use public monies to develop needed sidewalk.

## The Benefits of a Walkable Community

The goals and policies of the *Brigham City General Plan* encourage the City in developing a more walkable community. The development of the Pedestrian and Sidewalk Master Plan provides targeted solutions to pedestrian access and safety problems. The solutions also promote Brigham City as a walkable city for sustainability, equity, vitality and health; especially for children and seniors.

**Safety:** Continuous sidewalks and safe crossings are the basic building blocks for pedestrian safety. These elements are essential for the most vulnerable populations: children, seniors, and persons with disabilities. High speeds and volumes of motor vehicles can create safety concerns for pedestrians and residents. Neighborhood streets, that provide motor vehicle shortcuts for through traffic, are of particular concern to residents. On larger streets, high speeds and volumes of motor vehicle traffic can be at odds with crossing safety, especially on streets with infrequent traffic signals. According to the Federal Highway Administration, “At higher speeds, motorists are less likely to see a pedestrian, and are even less likely to be able to stop in time to avoid hitting one.” In collisions with motor vehicles, a pedestrian has an 85% chance of fatality at 40mph, a 45% chance of fatality at 30mph, and a 5% chance of fatality at 20mph. A balanced approach to street design regulates motor vehicle speeds and affords pedestrians safe and convenient crossing opportunities. Ample sidewalks also serve to buffer pedestrians from motor vehicle traffic. Drivers and pedestrians share responsibility for pedestrian safety. Education and enforcement, to prevent dangerous behaviors by both of these groups, are important elements of a comprehensive solution.

**Sustainability:** Walkable cities reduce environmental impacts by promoting walking as a zero emissions form of transportation. Good walking routes, to transit, complement the role of public transit in providing an environmentally sustainable alternative to the private automobile. Although typically not counted in transportation surveys, every trip on transit is sandwiched between two pedestrian trips. Especially in conjunction with cycling and transit riding, walking provides a promising non-polluting transportation alternative.

**Equity:** Walking is the most inexpensive and broadly accessible form of transportation and recreation. Walking requires no fare, fuel or license. For those who cannot afford other modes of transportation, the ability to walk safely is essential. For young people, walking affords a sense of independence that is not possible with other modes. For older people, walking is an effective means to stay active, both physically and socially.

**Vitality:** Walkable cities make for vital and active streets by promoting commercial and social exchange. With approximately 39 to 40% of the land area of United States’ cities dedicated to transportation, streets and sidewalks are the city’s most expansive public spaces. Sidewalks ideally function as positive places to meet, play, live, work, and shop. In residential areas, motor vehicle traffic negatively impacts residential property values. In commercial areas, the most congested streets are often the most economically vital.

**Health:** Walkable cities promote healthy citizens. Health professionals recommend walking as a form of physical activity to help prevent a host of diseases including; obesity, heart disease and some forms of cancer. In announcing

the nomination for U.S. Surgeon General, President George W. Bush said, “Walking 30 minutes a day will dramatically improve your life.” Drawing on the success of the public health model in reducing smoking, cities are recognizing that good places to walk help promote healthy citizens.

### Sidewalk Design Guidelines

The design of many streetscape elements is regulated by state and federal law. Traffic control devices must follow the procedures set forth in the Manual of Uniform Traffic Control Devices (MUTCD), while elements such as sidewalks and curb cuts must comply with guidelines implementing the Americans with Disabilities Act (ADA).

**Manual of Uniform Traffic Control Devices:** Brigham City follows the procedures and policies set out in the MUTCD. Traffic control devices include traffic signals, traffic signs and street markings. The manual covers the placement, construction and maintenance of devices. Under the guidelines, all devices must:

- fulfill a need
- command attention
- convey a clear, simple meaning
- command the respect of all road users
- give adequate time for proper response

The MUTCD emphasizes uniformity of traffic control devices to protect the clarity of their message. A uniform device conforms to regulations for dimensions, color, wording and graphics. Uniformity also means treating similar situations in the same way.

**Americans with Disabilities Act:** Title II of the Americans with Disabilities Act (ADA), signed into law in 1990, is a civil rights act that prohibits public entities from discrimination on the basis of disability. Newly constructed facilities must be free of architectural barriers that restrict access or use by individuals with disabilities. Brigham City technical standards use an accessible standard adopted by the Utah Department of Transportation.

The City must construct sidewalks in compliance with the Americans with Disabilities Act (ADA). The ADA states that “surfaces of public sidewalks shall be stable, firm, and slip-resistant, and shall lie generally in a continuous plane with a minimum of surface warping.” Wheelchair ramps must be made of concrete unless concrete is determined to be an “adverse effect” based on historical preservation regulations.

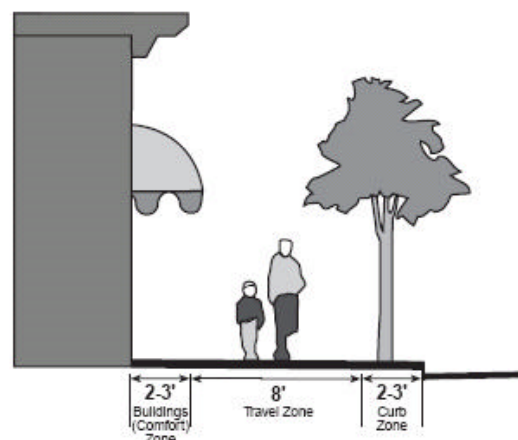
### Sidewalk Zones

Many of the design guidelines in this section are for elements that are located in the sidewalk portion of a street’s right-of-way. The sidewalk can be divided into three zones; the width of each zone depends, in part, on the overall width of the sidewalk.

**The Curb Zone:** The curb zone is the portion of the sidewalk immediately adjacent to the curb. Most street furniture, poles, and plantings are installed in this zone.

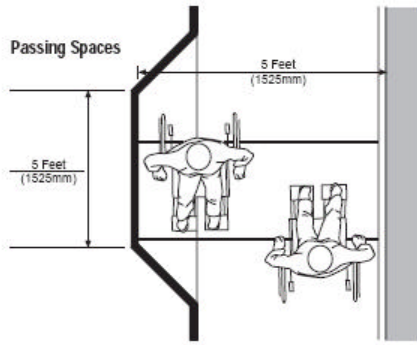
**The Travel Zone:** The travel zone is the portion of the sidewalk that is used for pedestrian travel parallel to the street. This zone should always be kept clear of obstructions.

**The Building or Comfort Zone:** The building zone, also referred to as the comfort zone, is the portion of the sidewalk that is adjacent to the property line. In business districts, window shoppers often use this zone, as do people waiting for friends or seeking cover from the rain. This zone can also be used for café seating or merchandise displays as long as they do not intrude on the pedestrian path of travel.



## Sidewalk Width

The Americans with Disabilities Act mandates a minimum width of 3-feet of unobstructed sidewalk passageway. Public sidewalks less than 5-feet wide are required to include a 5x5-foot passing space every 200-feet. Most people have at least a temporary disability at some time in their lives, so making sidewalks usable by people with disabilities improves them for everyone. Options for widening sidewalks and narrowing streets should be considered



whenever roads are reconstructed. This is especially important on streets with heavy pedestrian traffic. Sidewalk widening should only be done after ensuring that cyclists are accommodated in the right-of-way, usually with bicycle lanes.

Bicycle lanes offer advantages to pedestrians as well as cyclists. They help keep bicycles off sidewalks, they help channel and in some instances slow down automobile traffic, and they can make a possible narrower turning radius at intersections, slowing turning traffic and decreasing the crossing distance for pedestrians. They also serve as a buffer between pedestrians and moving cars, which is especially helpful on streets without parking.

Decisions about changing the width of sidewalks should be made on a street-by-street basis, taking into account cost, drainage, utility locations, heights of thresholds along the sidewalk, vegetation and other factors. In general, sidewalks on quiet residential streets can be narrower than sidewalks on busy commercial streets. Mailboxes, signs, posts, benches, trash cans, signal control boxes and other sidewalk furniture should be placed in the curb zone so they do not interfere with pedestrian traffic or with the ability of pedestrians, including children and people in wheelchairs, to see cars and be seen by motorists at intersections. It is also important that snow removal be kept in mind when deciding how much space to allot to cars and how much to give sidewalks. Unless snow is hauled away—an expensive proposition—it must be piled up on the side of the street, narrowing the road.

In commercial areas, wide sidewalks are usually important for pedestrians to feel comfortable. People tend to avoid the edges close to the street or to abutting buildings. Generally this means that the comfort zone is about 2 to 3 feet wide. People generally keep about 1.5 feet from objects in the curb zone—trees, signposts, etc. Ideally, the travel zone should be at least 8 feet wide, wide enough for two pairs of pedestrians to pass each other comfortably. City sidewalks are important social spaces as well as travel routes, and space for people to stop and talk or to stand and watch must also be factored into calculations.

## Existing Conditions

The first step in development of the Pedestrian and Sidewalk Master Plan was to inventory the existing conditions of sidewalk within the City. To inventory and evaluate the current conditions of the sidewalks within Brigham City, the City staff used the City's Geographic Information System (GIS). In addition to the status of sidewalk, the staff also evaluated additional items that should be taken under consideration in determining the need for sidewalk. The following are different items that were inventoried and evaluated:

- Existing sidewalk
- Lack of sidewalk
- Functional Classification of adjacent public roadways
- Identify land use attractors that will generate large numbers of pedestrians (schools, churches, parks, transit stops and commercial use)
- Adjacent land uses (agriculture, residential, commercial, industrial, public and vacant);
- Developed ADA ramps
- Pedestrian accidents

Based upon the above information, the following maps were developed to show the existing conditions within Brigham City.

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Front Map 1 – Land Use

Back of Map 1 - Land Use

Front of Map 2 – ADA Ramps and Missing Sidewalk

Back of Map 2 – ADA Ramps and Missing Sidewalk

Front of Map 3 – Pedestrian Attractors

Back of Map 3 – Pedestrian Attractors

## Data Analysis

Once all the information dealing with sidewalks (existing and lacking) and other information dealing with land use, attractors, functional classification of roadways and others was collected and verified as to accuracy, a model was developed so that a value could then be assigned to each segment of sidewalk. This value is based on the number of impacts and pedestrian attractors which influence that portion of sidewalk.

Once each segment of sidewalk had been assigned an individual value, a set of priorities was developed based on the values per sidewalk segments. The City used these priority values to determine the importance of each segment of sidewalk. The following are the priority values developed by this GIS model:

- Highest (6)
- High (5)
- Medium High (4)
- Medium Low (3)
- Low (2)
- Lowest (1)

The map showing the sidewalk priorities is on the following page.

From the information developed by the data analysis, there are two underlining items that need to be developed. The first is to develop a set of criteria to be used to evaluate when a sidewalk deferral is considered. Second is to develop a capital improvement program to install sidewalk in critical areas of the City where there is a lack of sidewalk.

## Criteria for Wavier of Sidewalk

As Brigham City continues to grow it becomes more and more important to maintain the workability of the community. The development of sidewalk is a necessary part of the development of new property within the community. Brigham City also has a large area of the existing community where no sidewalk was developed with the original development. These areas will need the have sidewalk installation to improve the safety of the pedestrian traffic in these areas. The installation can be placed into two different categories.

- **Ranking system** – The ranking system should be used as one of the criteria to consider a wavier of sidewalk. The ranking system was developed to determine the priority for missing sidewalk. The ranking system used ranges 1 to 6 to evaluate segments of missing sidewalk where 1 has lowest priority to 6 being the highest need.
- **Physical Constraints** – The conditions on a parcel may be such that the development of sidewalk, at this time, may cause more problems. Some of the constraints to consider could include the following:
  - Grade changes
  - Storm water problems
  - Proximity to other sidewalk
  - Existing canals or drainages
- **Additional Criteria** – There may be additional criteria to consider. The following are some criteria to consider:
  - Isolated vacant lots
  - Reasonable Alternatives

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**Front of Map 4 - Sidewalk Priority**

**Back of Map 4 - Sidewalk Priority**

## Sidewalk Improvement Program

The purpose of this plan is to develop an organized process to determine the need for sidewalk and when the Planning Commission and City Council should consider the deferral of sidewalk as a requirement for development. Based on the analysis done as part of this Plan, there are large areas within the City that haven't been developed over the years and no sidewalk was installed at that time. As part of the Pedestrian and Sidewalk Master Plan, there is a need for developing a program for going back into these developed areas and beginning a program of installing sidewalk where it does not now exist.

### **Recommendation:**

*The City should expand the current sidewalk improvement program. The sidewalk priority system developed as part of the Pedestrian and Sidewalk Master Plan should be used to identify and prioritize where sidewalk improvements should be used as part of the program to set priorities for making improvements on an annual basis.*

## Funding Sources

There are a number of potential funding sources by which the City could fund a Sidewalk Improvement Program within Brigham City. The following is a list of potential funding sources that could be used to develop sidewalk:

- **Federal/State:** There are limited Federal and State funding programs that could be used to improve sidewalk within Brigham City. Most of these programs focus on State Highways only. There are some limited areas that could be considered under these programs. Below is an overview of the UDOT Safe Sidewalk Program:

### **UDOT Safe Sidewalk Program**

The Safe Sidewalk Program provides funding for construction of new sidewalks adjacent to state routes where sidewalks do not currently exist. The program enables sidewalks to be installed in locations where major construction or reconstruction of a route is not planned for 10 or more years. In addition, it is UDOT policy to consider adding sidewalks on all UDOT projects where pedestrian traffic would be a significant factor.

### **Safe Sidewalk Program Criteria**

For a proposed sidewalk location to be considered for the Safe Sidewalk Program, it must meet the following criteria:

- Be in an urban area or in an area that is urban in nature
  - Have significant pedestrian traffic
  - Local governments must match 25 percent in cash
- **Grants:** Grants are funds provided by an outside agency, typically the federal or state government. They are required to be used for a specific purpose in a specified amount of time. Each grant is different and usually has an underlying purpose. Grants often require the City to compete with other agencies or cities in order to obtain funding. Since grants usually require a local match, additional funding is allocated by the City as a condition of the grant award.
- Community Development Block Grants:** Community Development block grants from Housing and Urban Development (HUD) are granted through the Bear River Associations of Government (BRAG) to assist in meeting various needs of residents of Northern Utah. One use of block grants by BRAG is to target the needs of low and moderate-income neighborhoods. For those neighborhoods that meet the federal test for income levels; that is, 51% of the residents are below 80% of the median income for the City, block Grant money could be used for the installation of sidewalk.
- **New Development:** When new projects are developed, sidewalks are routinely required as part of the development. The sidewalk must be built to City standards and the cost is passed on by the developer to the property owners.
  - **Assessment District:** An Assessment District is another method that allows a group of property owners to share the cost of large common projects such as street improvements and sanitary and storm sewers. The

Assessment District process usually begins when a property owner makes a request to the City for an eligible capital improvement. The City then defines an area for the District. All owners within the district pay for the costs of the improvements and they are apportioned to each property owner in an equitable fashion.

- **Bond:** The City has bonding power to issue a bond as a form of long-term debt used to buy or build capital improvements. Bonding has been used historically to fund large-scale capital investments in urban infrastructure. For example, Brigham City is currently considering bonding for Storm Water Projects within Brigham City.

There are two types of bonds a community can use. One is a Revenue Bond and the other a General Obligation Bond (GO Bond. A Revenue Bond is a bond which is approved by the City Council. It must have a funding system in place to generate a revenue stream to pay the bond back. A General Obligation Bond requires a vote by the citizens in a general election. The City then imposes additional property taxes to pay the annual interest and principal payments, typically over 20 years.) Debt instruments such as bond issues are sometimes called a “pay as you use” form of capital financing because people pay for a long-lived capital asset over its useful life.

### Defer Improvements

The deferral of public improvements is a valid option and should be reviewed on a case-by-case basis. There are two basic assumptions that should be considered when the City defers any public improvements. The first assumption is whether the area is where little or no development has taken place. The second assumption is the opposite of the first assumption; these are areas which are currently highly developed. As the Planning Commission and City Council consider a deferral in one of these two different areas the criteria should be somewhat different.

To evaluate whether a deferral should be considered, a point system should be used on each evaluation. The ranking sheet on the following page evaluation should be considered to review all deferrals.

### Sidewalk Deferral Ranking Sheet

Category		Points	Weight X Points	Total
Side Walk Priority	Highest	6	1.00	
	High	5		
	Medium High	4		
	Medium Low	3		
	Low	2		
	Lowest	1		
Physical Constraints	Grade changes		0.20	
	- 6 % and Greater	4		
	- 4 to 5.9 %	3		
	- 2 to 3.9 %	2		
	- 0 to1.9 %	1		
	Proximity to other sidewalk		0.30	
	- Adjacent Lot	5		
	- 330'	4		
	- 660'	3		
	- 1320'	2		
- 2640' (half mile)	1			
Existing canals or drainages	3	0.10		
Storm water problems	1	0.10		
Other Criteria	Urbanization		0.10	
	- Developed Area	2		
	- Undeveloped Area	1	0.20	
	Pedestrian Generating Use			
	- Commercial	3		
	- Residential	2		
- Industrial	1			
Total				

## **Appendix:**

### **Brigham City – Public Works Standards**











